

HISTORY OF MADRAS WATER SUPPLY

மதராசுப்பட்டினம் - சென்னை-குடிநீர் வழங்கல் கபந்த வழித்தடங்கள்.....

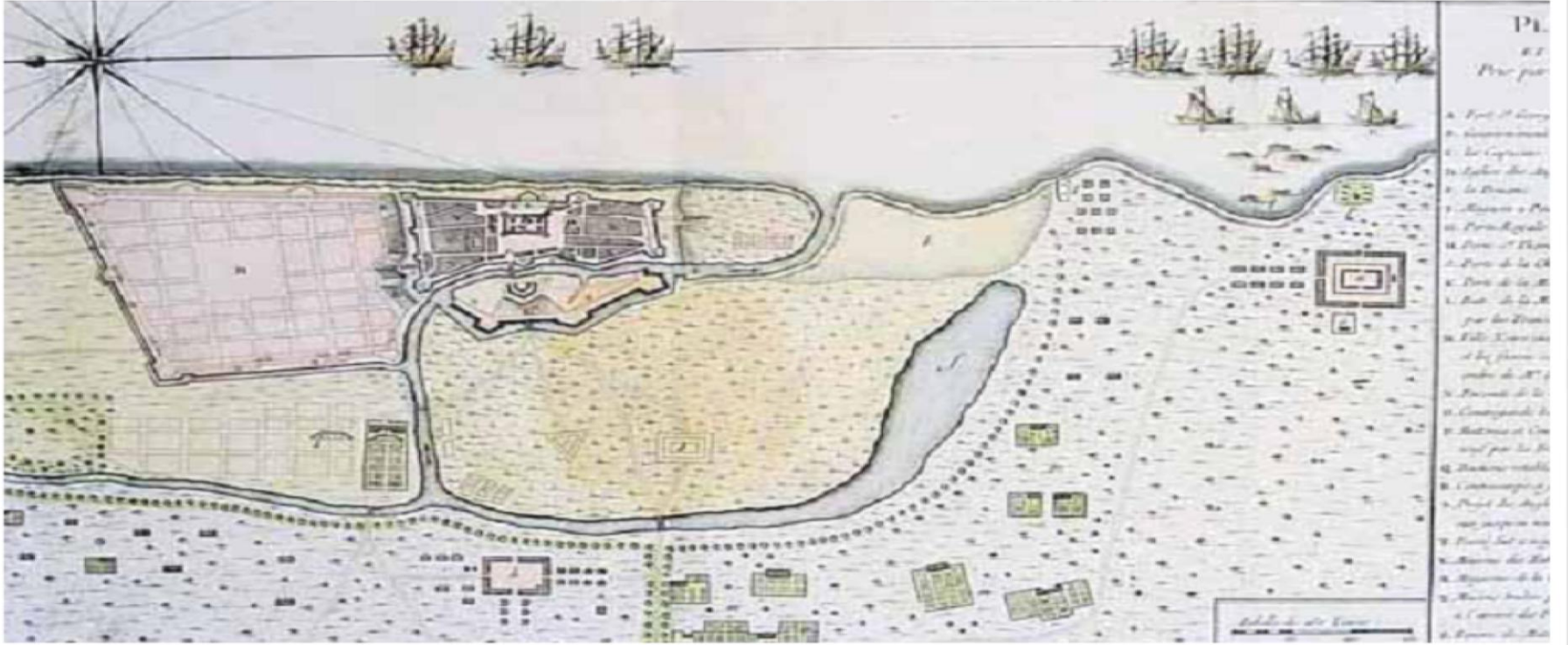
Foot prints of Madras Pattinam - Chennai - Water Supply



சென்னை குடிநீர்
Chennai Metro Water

1639 - Formation of Madras

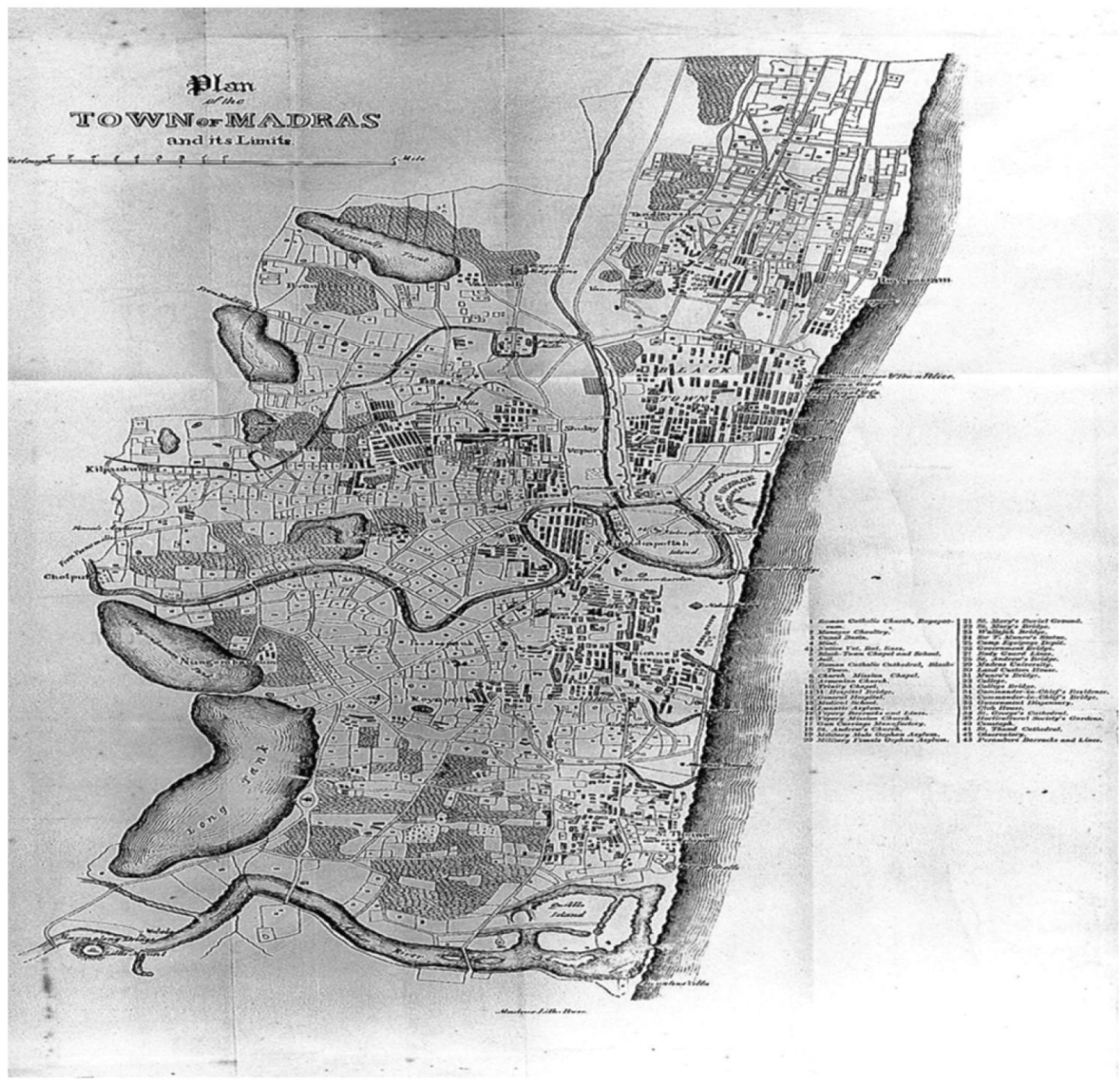
Establishment of trade locality along the Coramendal Coast at Madrasa kuppam or Chennappa naickers Fishing Hamlet for East Indian Co., paradigm shift from Armagaon



18ஆம் நூற்றாண்டில் மதராசுப்பட்டினத்தில் வரைபடம்



19th
Century -
Plan of
Madras
and its
Environs





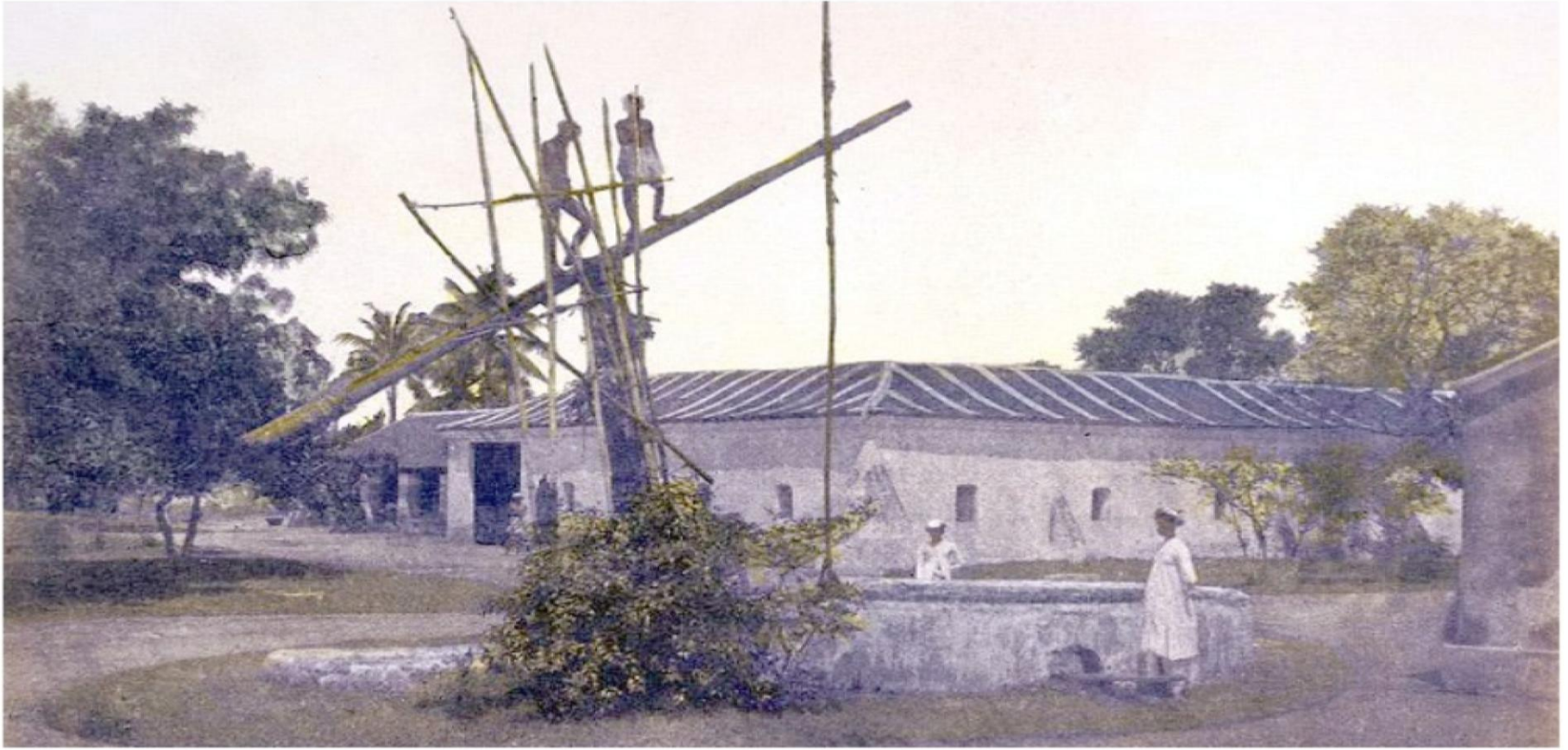
1639 -1770 - Sources of Water Supply

Source of water for
human consumption

Traditional Nullahs, Natural Streams , Rivers
Tanks (Ooranies and Nalla Thane ooranies),
open wells etc.,



1639 -1770 - Sources of Water Supply Mode of Drawal



மதராசப்படினத்தின் ஏற்றக் கணறு (பிகோட்டா)
Well Picotta in Madras





1639 -1770 - Sources of Water Supply Mode of Drawal



1772 - Madras Seven wells Government Water works built by *Captain Baker*
on the northern end of whites' town at Pedda Naickanpet.

WAYS AND WORKS IN INDIA

BEING AN ACCOUNT OF
the Public Works in that Country from
the Earliest Times up to the
Present Day, by

^{George}
^{Water}
G. W. MACGEORGE, M.I.C.E.

LATE OFFICIATING CONSULTING ENGINEER TO THE
GOVERNMENT OF INDIA FOR RAILWAYS

WITH NUMEROUS ILLUSTRATIONS AND MAPS

Westminster

ARCHIBALD CONSTABLE AND COMPANY

PUBLISHERS TO THE INDIA OFFICE

14 PARLIAMENT STREET, S.W.

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CHAPTER III

MADRAS AND NAGPUR

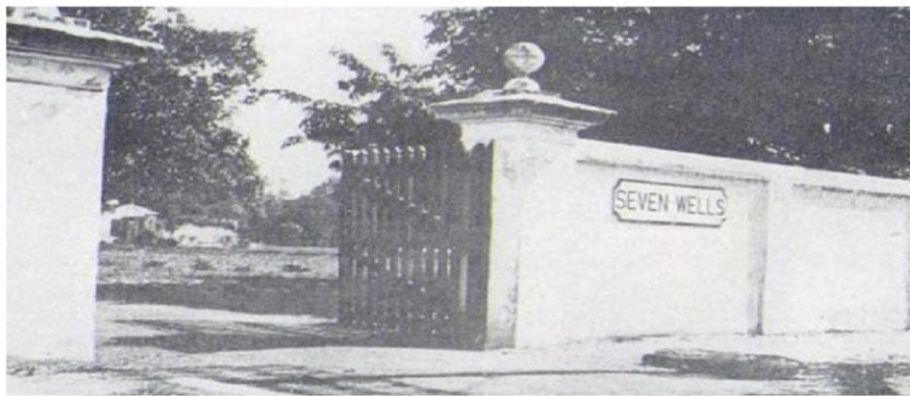
Madras Waterworks—The Seven Wells supply—The City Waterworks—Outline of projects—The Red Hills reservoir and feeders—Details of Madras City water-supply—Injuries from floods—Insufficiency of scheme—Opening of works, and improvements suggested—The Nagpur Waterworks—Population of Nagpur—Old sources of water-supply—Native reservoir at Ambajhari—The new project—Details of execution—Puddle trench and wall—Earthworks of new embankment—Waste weir—Arrangements for withdrawing water—The straining and regulating tower—The syphon discharge pipe—The main to the city—Completion of works—Later supplementary supply for higher parts of the town, and for civil station—Principal details and particulars of the new project.

Madras Waterworks, 1866 to 1872.

By the census of the year 1891 the city of Madras and suburbs contains a population of 452,518 persons. It depends for its water supply on two separate and distinct sources,—one being the 'Seven Wells' Government Waterworks, supplying Fort St. George, the shipping, and various Government institutions and offices,—the other being the 'Madras Water-works,' which is the main supply of the city, and is under municipal control.

The Seven Wells waterworks is a very early project, having been initiated 120 years ago, or in the year 1772, by a Captain Baker, who constructed it under a contract with Government, by which he undertook for a period of seven years to supply, and keep always full, certain reservoirs in the fort, containing sufficient water for 6000 men for four months, at the rate of three quarts per man per day. In the year 1782, the works were purchased by Government for the sum of £10,500. Including this sum the total cost of the Seven Wells water-supply amounted to £42,492. As originally constructed the supply was confined to the garrison of Fort St. George, but it

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1772 ஆம் ஆண்டில் அமைக்கப்பட்ட ஏழுக்கணறுகள் அமைப்பு.
Seven wells water works - 1772

**Infiltration Gallery of 10 Wells proposed
and built.**

**Out of 10 wells, 3 wells were abandoned
owing to poor yield at the time of
commissioning and named as SEVEN
WELLS WATER WORKS**

**Custodian Sylvester Nicholas
and
Evelyn Nicholas**

has since been extended to nearly all the military institutions and buildings in the Presidency town.

The Seven Wells premises or 'compound' is situated about a mile from the sea, and nearly two miles from the Fort and Penitentiary, which are the farthest points to which the supply extends. On these premises there are now 10 wells, each 16 feet in diameter, varying from 23 to 29 feet deep, from which the water is raised by means of 'Picottah' levers into cisterns, and passed through a filter, measuring 48 feet by 30 feet by 6 feet. From the filter the water is again raised into two main cisterns, each holding about 2000 cubic feet, and thence is conveyed by gravitation through lines of cast-iron pipes, varying from 5 to 3½ inches in diameter, to the various points of distribution, the principal of which are the gunpowder factory, clothing and medical store, arrack distillery, bullet factory, Commissary-General's office, Fort St. George, the Ordnance Lines, and Penitentiary. The Seven Wells water-works discharges over 140,000 gallons a day, or 51¼ million gallons a year, at an annual cost of about £1200. During the long period that the Wells have been in operation they have shown no signs of failure, and it is estimated that should a further supply of water be necessary it could easily be augmented to three times its present amount.

The inception of the Madras City Waterworks, under the control of the Municipality, dates as far back as the year 1866. Long before that year, however, the great impurity of the drinking water obtained from the numerous wells scattered all over the town, which formed the only source of supply, was fully recognised. In the year 1855 an extensive irrigation improvement scheme, estimated to cost nearly £434,000, was proposed, and in combination therewith the surplus water from a number of large irrigation tanks or reservoirs was to have been stored in a reservoir situated about 8 miles from the town, and conveyed by an open channel or canal into two basins in Madras, from whence it could be pumped into settling reservoirs and thence passed into the mains for distribution. No action was taken on this proposal, but in the year 1861 a somewhat similar project was brought forward, and an engineer officer was appointed to report on it. without, however, leading to any practical results.

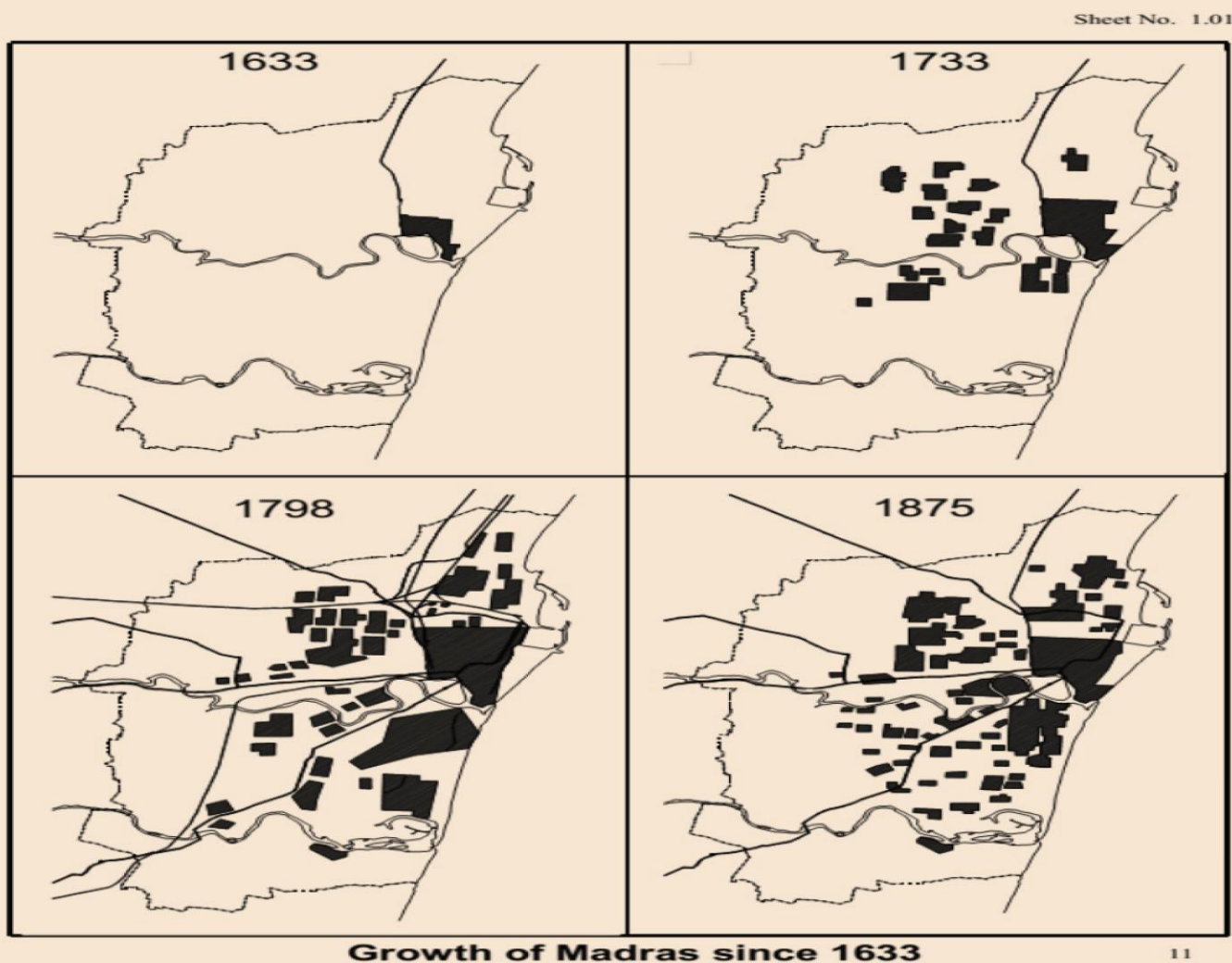
1772 - Seven Wells Government Water Works



1772 ஆம் ஆண்டில் அமைக்கப்பட்ட ஏழுக்கன்றுகள் அமைப்பு.
Seven wells water works - 1772



Growth of Madras from 1633 - 1875



1818 – Drought Mitigate measures

Madras Collector
Col. Ellis
Drought Mitigate
measures dug
27 wells .
Remarkable Tamil
Tablet depicting the
works were found at
Periya
palayathamman Koil
Royapetta .





111

during the drought

Madras Collector Ellis Constructed the wells realising the ethics of Thirukural.





1851 onwards

Sir Arthur Cotton Attempts and
Col. O' Connell's Proposals to resolve Madras
Drinking Water needs

THE
WATERWORKS OF LONDON,

TOGETHER WITH
A SERIES OF ARTICLES

ON
VARIOUS OTHER WATERWORKS.

BY
ZERAH COLBURN AND WILLIAM H. MAW.

(Reprinted from "ENGINEERING.")

PHILADELPHIA:
HENRY CAREY BAIRD,
INDUSTRIAL PUBLISHER,
405 WALNUT STREET.
1868.

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MISCELLANEOUS WATERWORKS.

170 ft. The engine is worked with very little expansion, and its pumping capacity is 800,000 gallons per hour. At present the engine is supplied with steam by a set of old boilers, which are not fully capable of doing the work; but this state of affairs will, no doubt, be altered. This pumping-engine at Cincinnati is, we believe, the largest yet erected in America.

MADRAS WATER SUPPLY.

Sir Arthur Cotton has persistently stated that the one great and paramount requirement throughout India is water; and although we may, perhaps, somewhat demur to accepting this assertion to the extent to which that officer intended it to apply, there can be no doubt entertained as to its correctness generally.

The supplying of Madras with an abundance of pure water is a question which has occupied the attention of the Government there for many years, having been often forcibly brought to its notice by the repeated complaints of the gradually increasing impurity of the water drawn from the wells, which at present form the only source of supply. The gradual deterioration of the Madras wells is notorious. The town is built upon a portion of the belt of silicious sand which runs along the Coromandel coast, and which, in its uncontaminated state, yields, nearly everywhere, a very pure fresh water; owing, however, to the filthy state of the surface of the ground and the constant flushing of drains, the porous subsoil has absorbed much sewage and other impurities, the result being that many of the wells are not only unfit for use, but offensive. From an analysis of the waters of the "Seven Wells" enclosure at the north side of Black Town, from which the troops in Fort Saint George are supplied with water, it appears that the amount of solid ingredients in one imperial gallon varies from 23.10 up to as high as 70.10 grains; the largest amount of organic matter contained in these waters is 7.85 grains, and of inorganic matter 64.40 grains per gallon, and of almost all the wells it was remarked that their waters gave clear evidence of the presence of animal life as well as vegetable growth, and in one instance animalcules were discovered.

In 1855, Lieutenant (now Lieutenant-Colonel) O'Connell, of the Royal Engineers, having been deputed to investigate the subject of improved water supply to Madras, submitted a report, with plans and estimates, showing that a scheme for that purpose was perfectly feasible. No action was, however, taken on his proposals, nor on those subsequently put forward by others, until Mr. Fraser, C.E., suggested the probability of being able to improve upon Colonel

1867 ஆம் ஆண்டு லண்டன் நகரில் வெளியான புத்தகத்தில் மதராஸ் குடிநீர் பற்றிய கட்டுரை

An article on Madras water Supply in Water Works of London Book - 1867



[illegible]

Tamaraipakkam Weir on Kotralaiyaar



சென்னைக்கு நீர் வழங்கும் கொற்றலை ஆற்றின் தாமரைப்பாக்கம் மதகு
Tamaraipakkam Weir Across Kortleiar River for Chennai Water Supply

1872 - Masonry Shaft at Kilpauk



1872 ஆம் ஆண்டு முதல் குழாய்களில் நீர்வழங்கலுக்கு பயன்பட விசை சறுக்குப்பாதை (Shaft)
Inclined shaft for Dynamic Push for piped water supply - 1872



1872 - Masonry Shaft at Kilpauk



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Inclined shaft for Dynamic Push for piped water supply - 1872



2014 - Masonry Shaft Refurbished at Kilpauk







ஜோன்ஸ் நீர் உள்வாங்கு கோபுரம் – புழலேர்
Jones Intake tower for water - Redhills

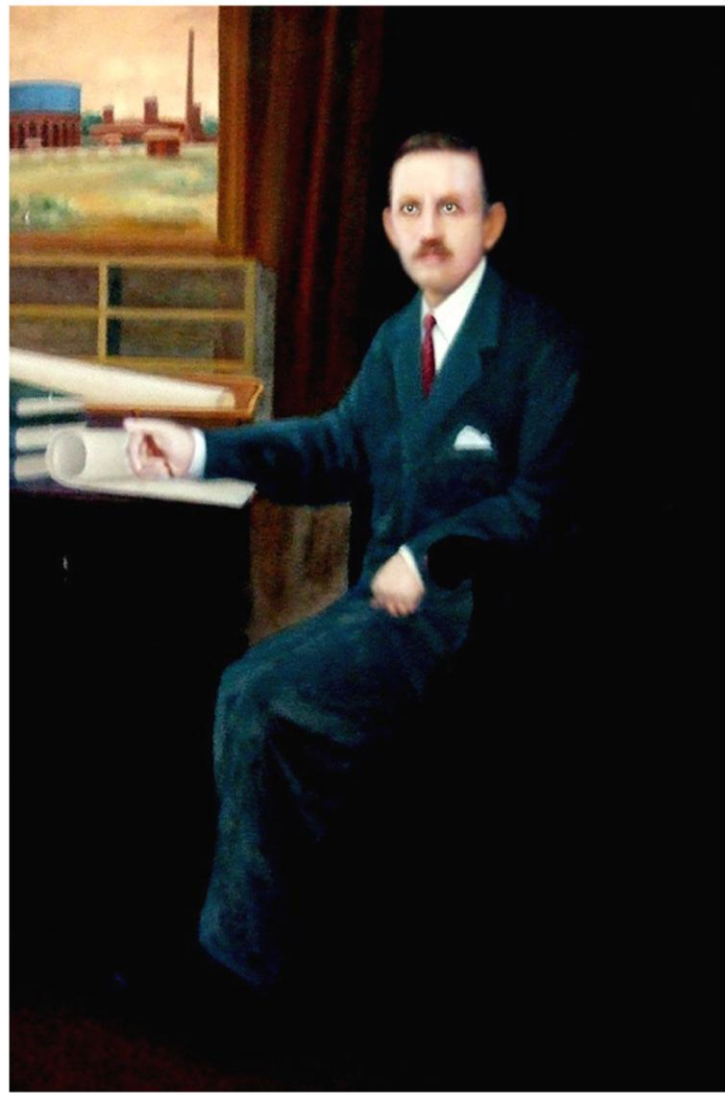






மதராஸ் பட்டினத்தில் பொதுக்குளாய் நீர் விநியோகம்
A Public Fountain, Madras.





Dixon, M.Inst.C.E.

3. "The Selection of Sources of Water Supply with Suggestions as to Economy in the Design and Operation of Works," by George Mitchell, M.I.Mech.E.
4. "The Madras City Waterworks," by James Welby Madeley, M.A., M.Inst.C.E., M.Am.Soc.C.E.

1910 - 1932

James .Welby. Madeley

" Father of Madras Water Supply and Sewerage Disposal"

✓Fundamental works conversion of open channel to First closed raw water conduit
Establishment of KILPAUK WATER WORKS,

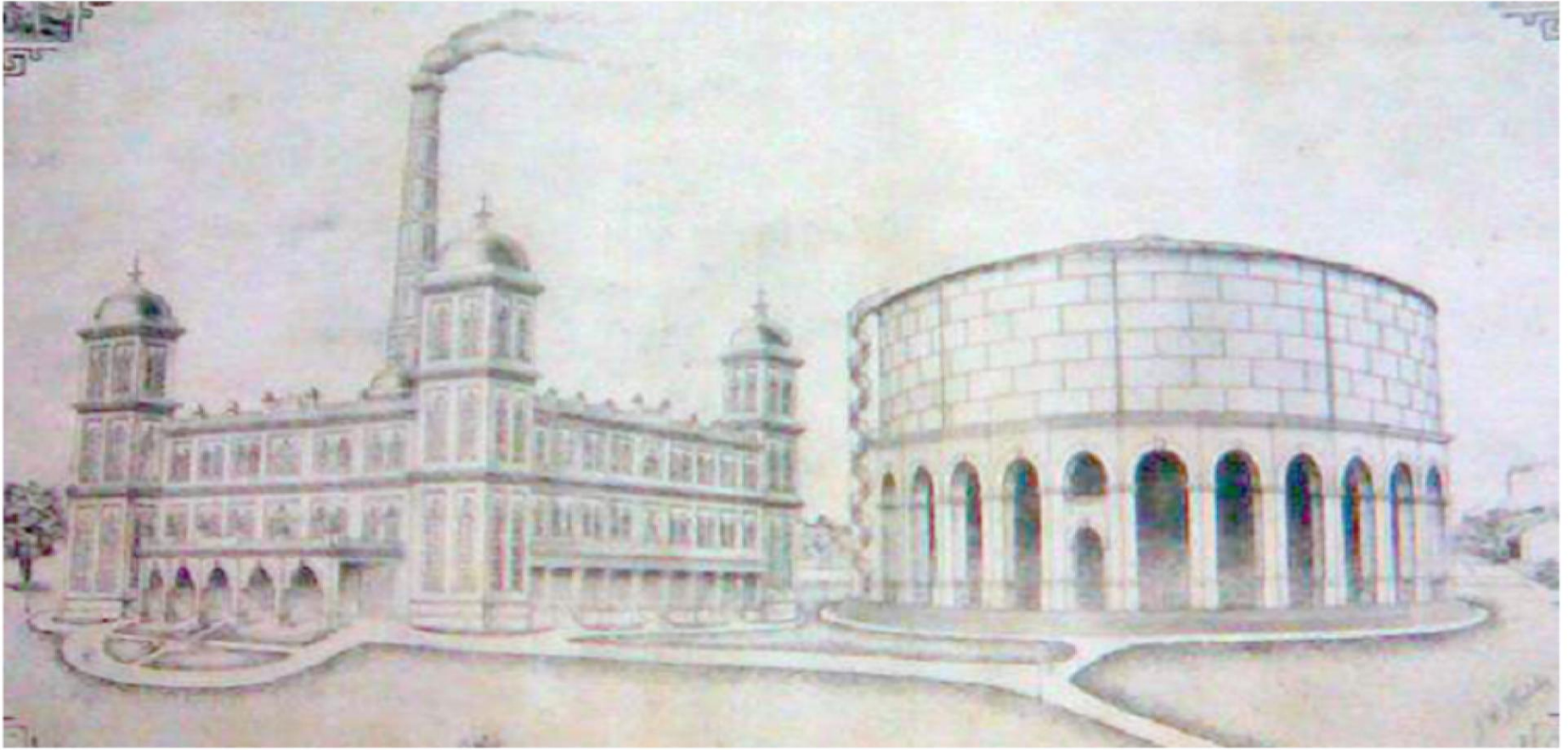
✓Pumping through Steam Engines ,

✓ Clear water trunk mains and distribution net works for northern and as well as to the southern parts of the MADRAS-

✓ Saidapet village supplied from infiltration gallery at fringes of Adair River in Ekkattu thangal.

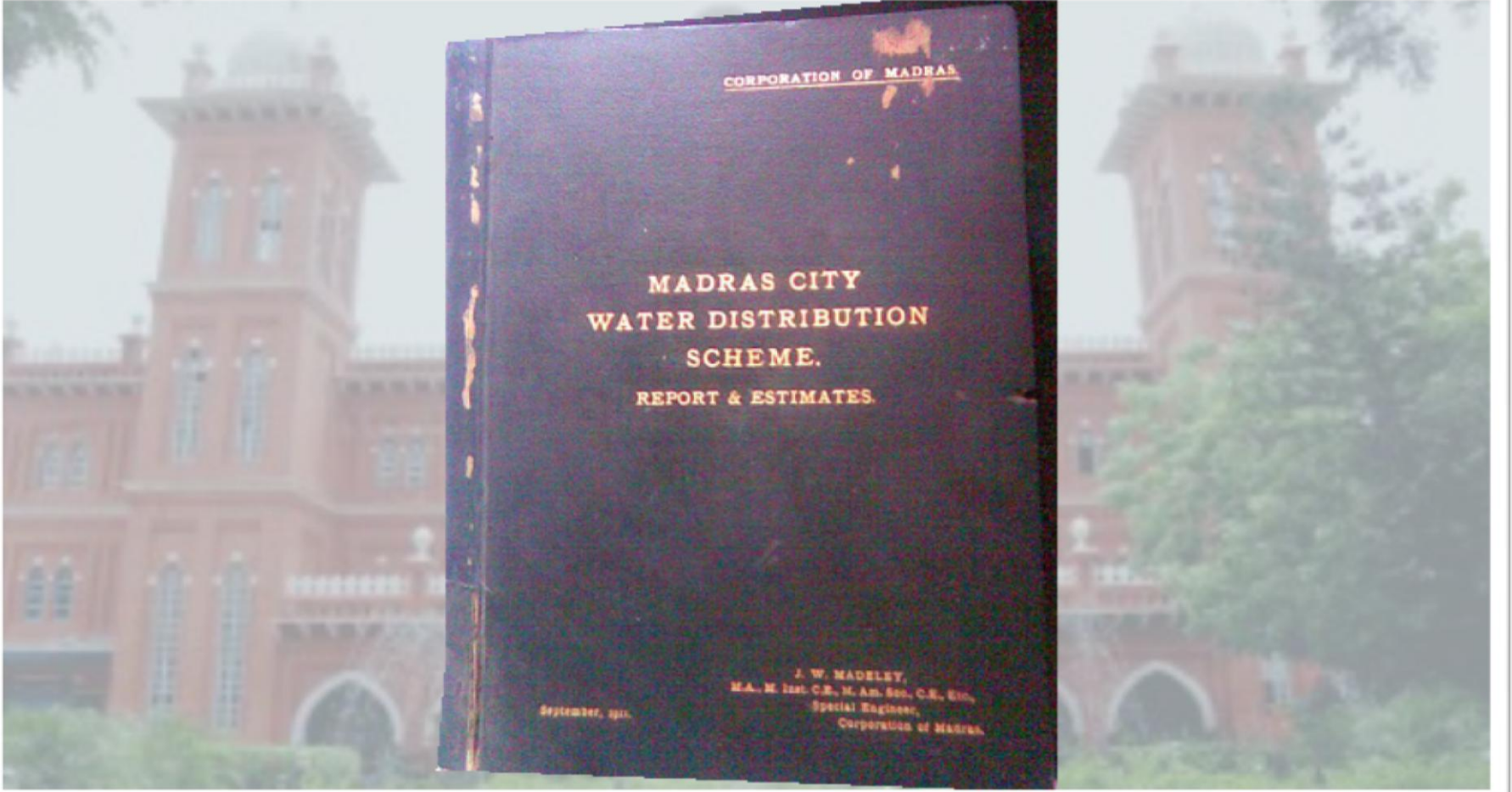
✓Experimentation of slow sand filtration

✓Chlorination



மேட்டன் வரைந்த கீழ்பாக்கம் நீர் நிலைய முன்மாதிரி தோற்ற வரைபடம்
Kilpauk water works perspective view by J.W. Madeley



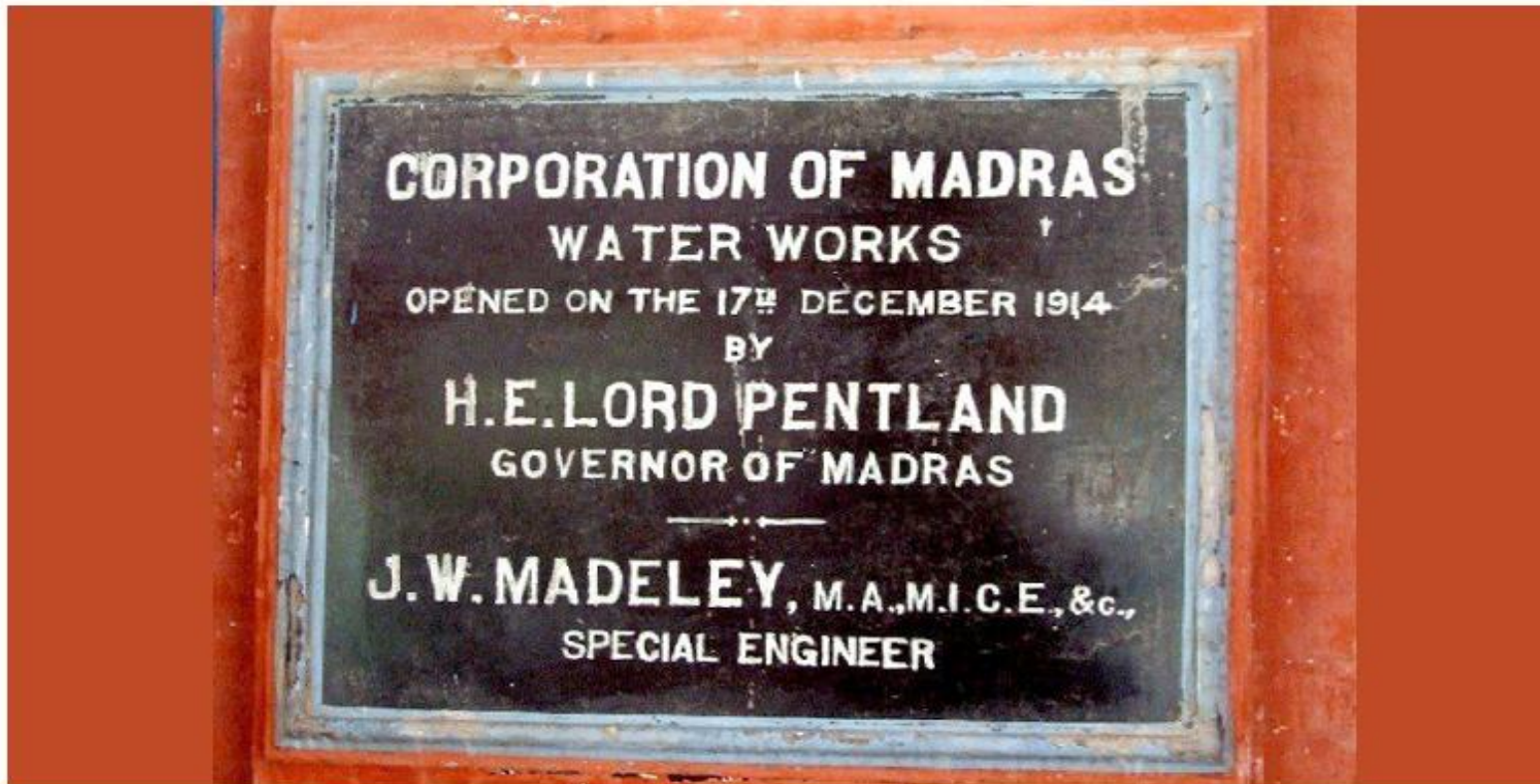


மதராஸ் நகரின் குடிநீர் விநியோகத்திட்டம் - அறிக்கை, மதப்பீட்டின் முகப்பு -
ஜே.டபிள்யூ மேடல் -செப்டம்பர் 1911



கீழ்ப்பாக்கம் நீர் நிலையம்
Kilpauk water Works





கீழ்ப்பாக்கம் நீர் நிலையத் திறப்பு விழா கல்வெட்டு 17.12.1914
Kilpauk water works Inagural Tablet - 17.12.1914





கீழ்பாக்கம் நீர் நிலையத்தில் மணல் மந்த ஷட்கட்டிகள்
Kilpauk water works Slow sand Filters.





1904-1913 - Hormusji Nowroji



But what was forgotten was that the water works would have never become a reality had it not been for the effort of another man, and

an Madarasi — **Hormusji Nowroji**,

Native Parsi – Zorastanianan -Engineer

In fact, Nowroji's work predates that of Madeley and it would be no exaggeration to

refer to him as the

'Father Of Piped Water Supply' in the city.

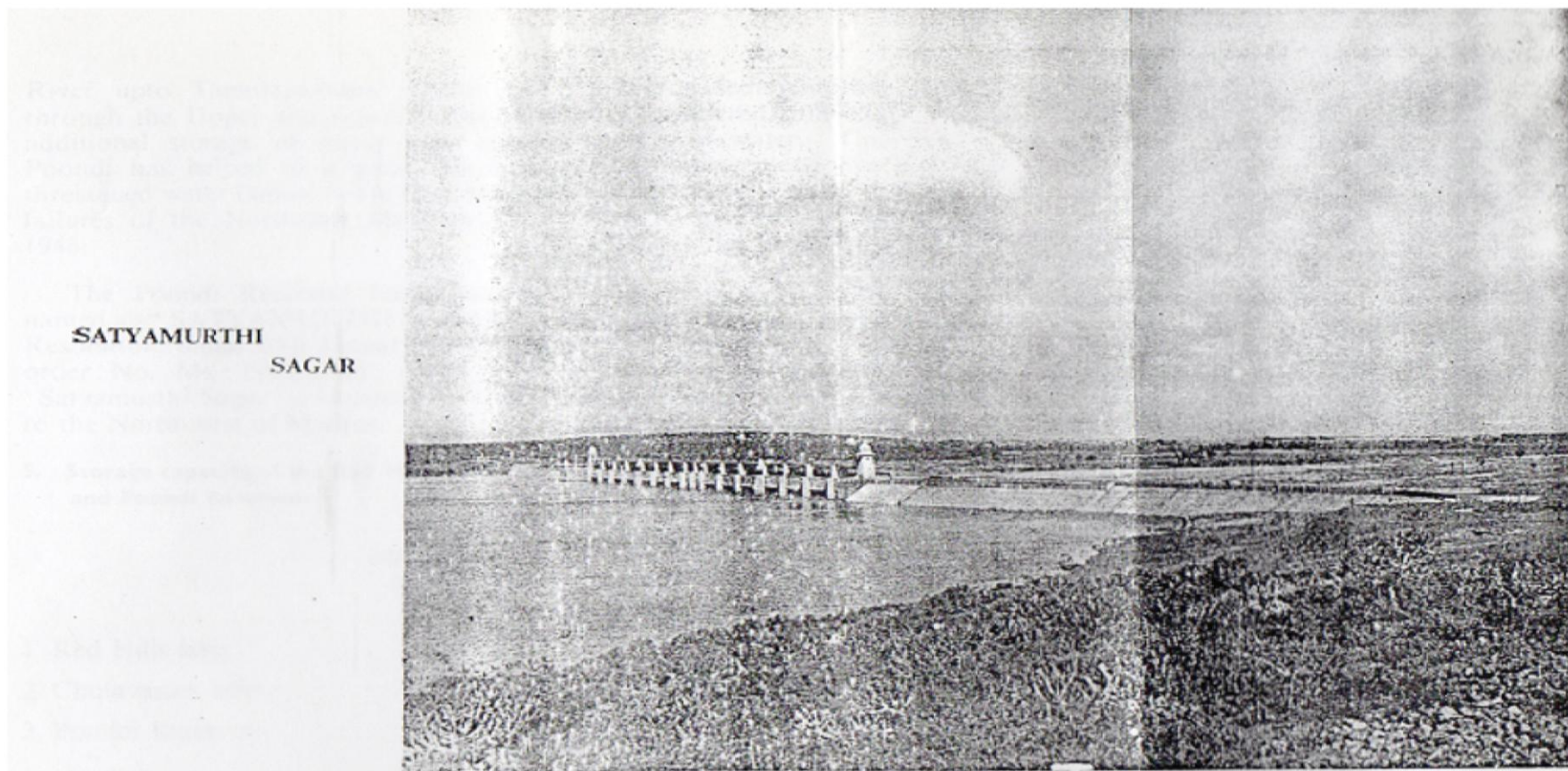


To monitor this distribution system, though there

systems, massive data storage devices, and a host of other tools that have been developed in the last few years. In fact, the Internet has become a virtual social and organizational space in which individuals and organizations can interact with each other, exchange information, and conduct business. The Internet has also become a powerful tool for the dissemination of information, and it has become a key component of many organizations' information systems. The Internet has also become a key component of many organizations' information systems. The Internet has also become a key component of many organizations' information systems.

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Claim of Design and execution of Madras New Water works by Hor Musji Nowroji - April - 1915



**SATYAMURTHI
SAGAR**

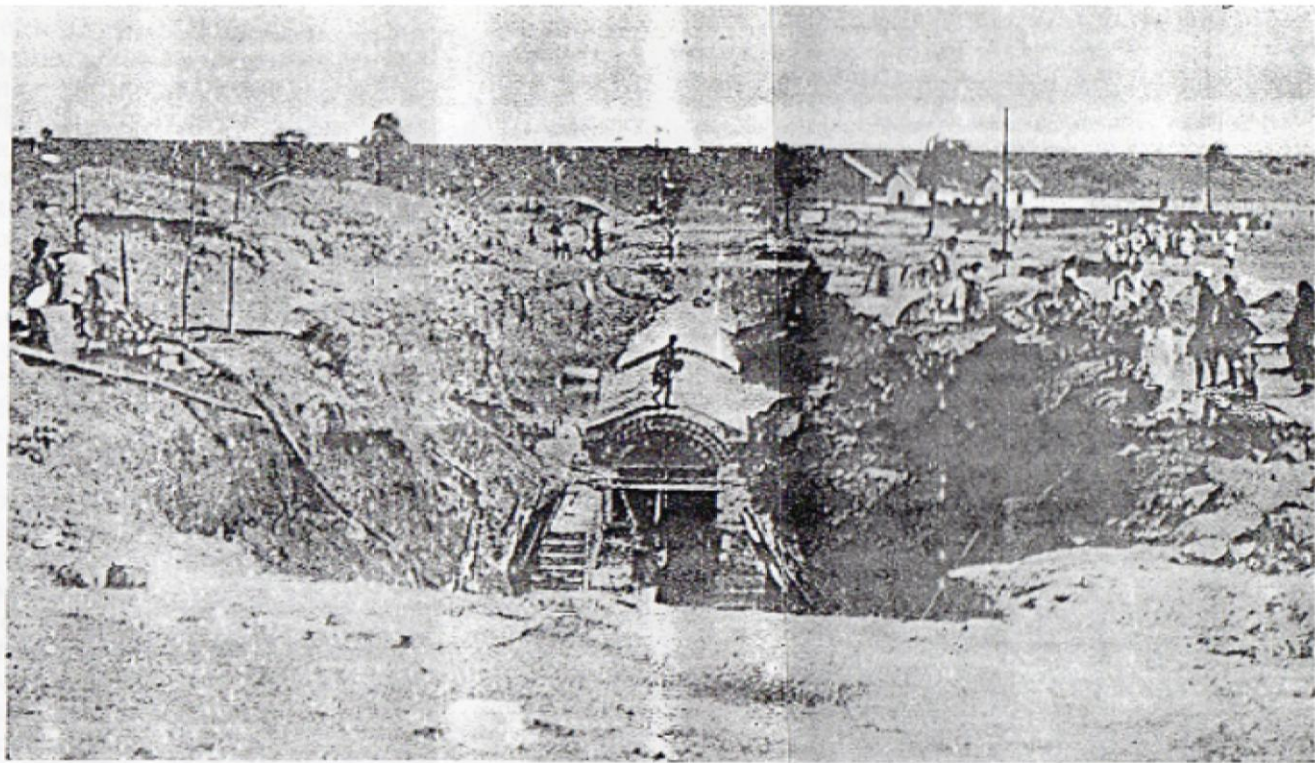
புண்டியில் அமைந்துள்ள - சத்தியமூர்த்தி சாகர் - நீர்தேக்கம் - 1949







CONDUIT AT ITS COMMENCEMENT.— Construction has been completed for a distance of 800 feet from the roughing filters at Red Hills. The weir recorder attached to the roughing filters and the Jones Tower are seen in the background.

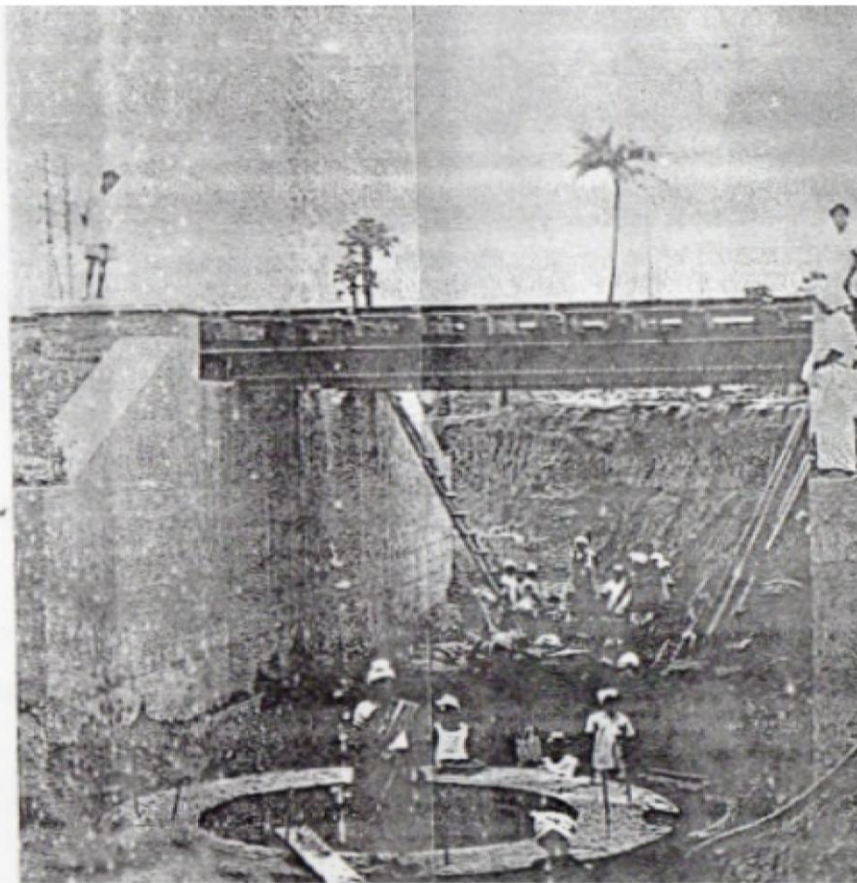


புழலேர் - றெட்ஹில்ஸ்-அருகில் கட்டப்படும் இரண்டாம் நீர்வழிக்கால்வாய்





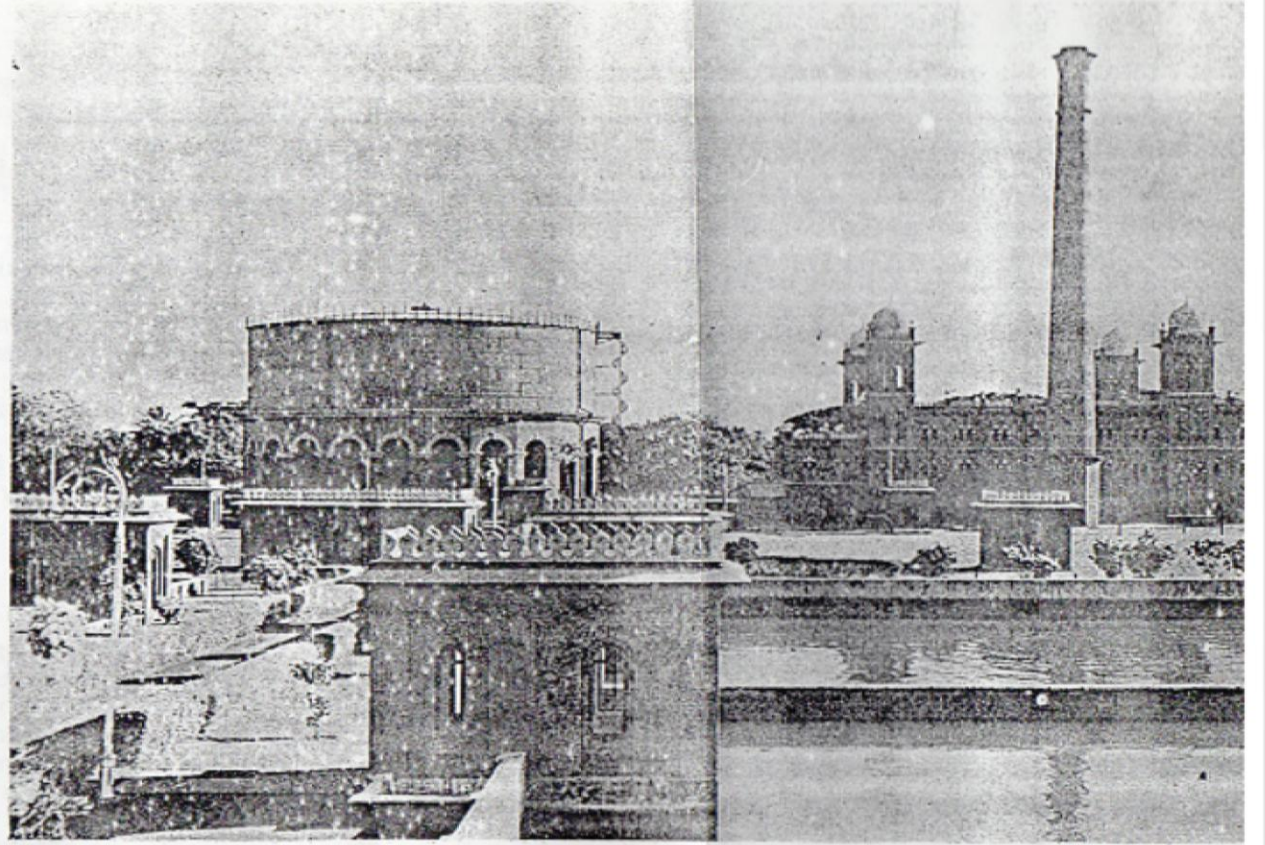
CONDUIT UNDER THE M. & S. M. RAILWAY LINES AT VILLIVAKKAM was carried through a 20 feet girder bridge specially constructed for the purpose. The conduit itself was founded on well foundations at this place.



. னில்லி வாக்கம் ரயில் பாலம் கீழே கட்டப்படும் ஓரண்டாம் நீர் வந்த கால்வாய் கட்டமைப்பு - 1949



A VIEW OF THE KILPAUK
WATER WORKS.—The Pumping
Station and the Steel Balancing tank
are seen in the background.



கீழ்பாக்கம் குடிநீர் சுத்திகரிப்பு நிலையம், மேல்நிலைத் தொட்டி, நீரேற்று நிலையம் - 1949.



Madras Road Signages



✓Baker 's Street @ N.S.C . Bose
Road near Madras High Court

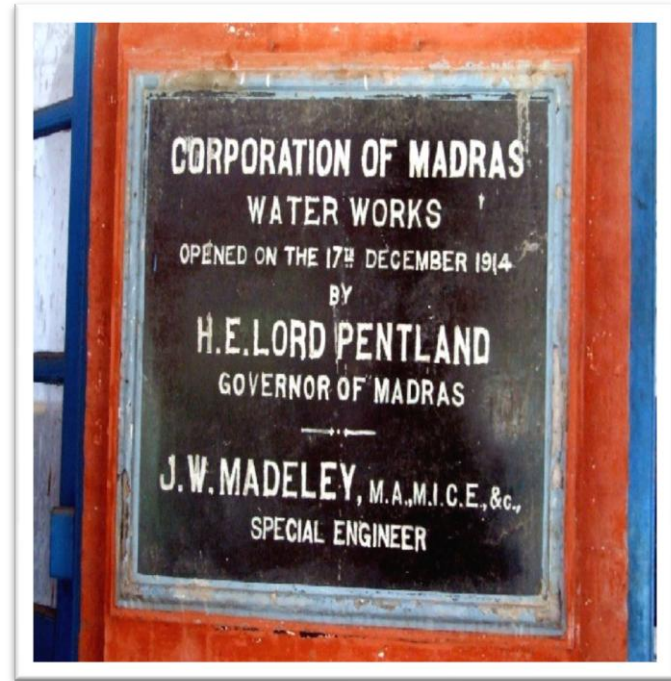
✓JONES ROAD @ Jn of Anna Salai
leading to Saidapet

✓Ellis Road @ Jn of Walaja Road
and Anna Salai near Anna Staute

✓Nowroji Road @ Jn. Ponnammallee
High Road near Pachiappapas
College in Chetpet



Madely Road Historical Wrong



Madley ROAD @ Jn of Usman Road

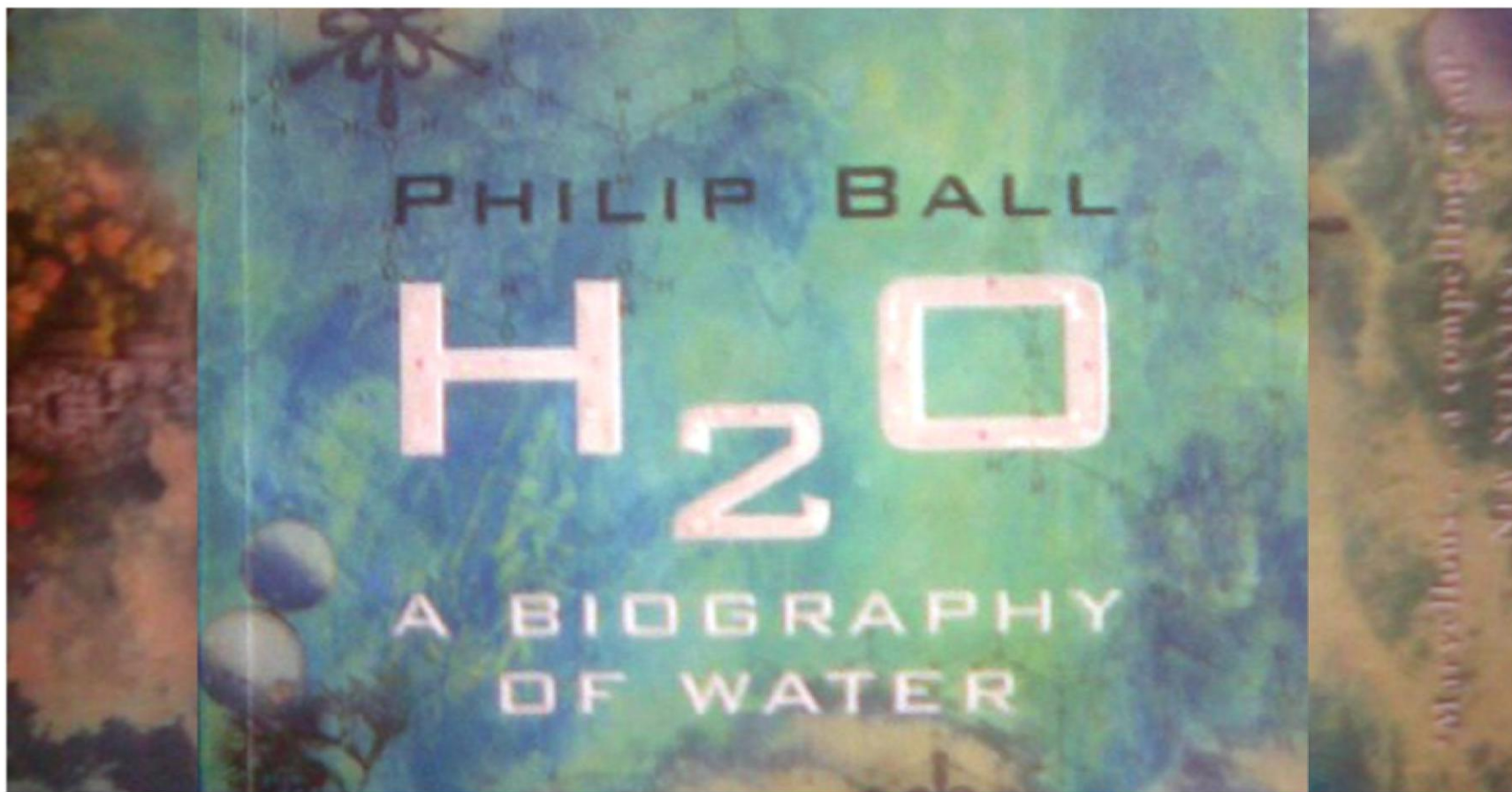
Leading to Old Mambalam named for Remarkable contributions of J.W.MADELEY , Engineer , Water & Sewerage Water works , Madras.

Is it MADLEY Road ?

Or

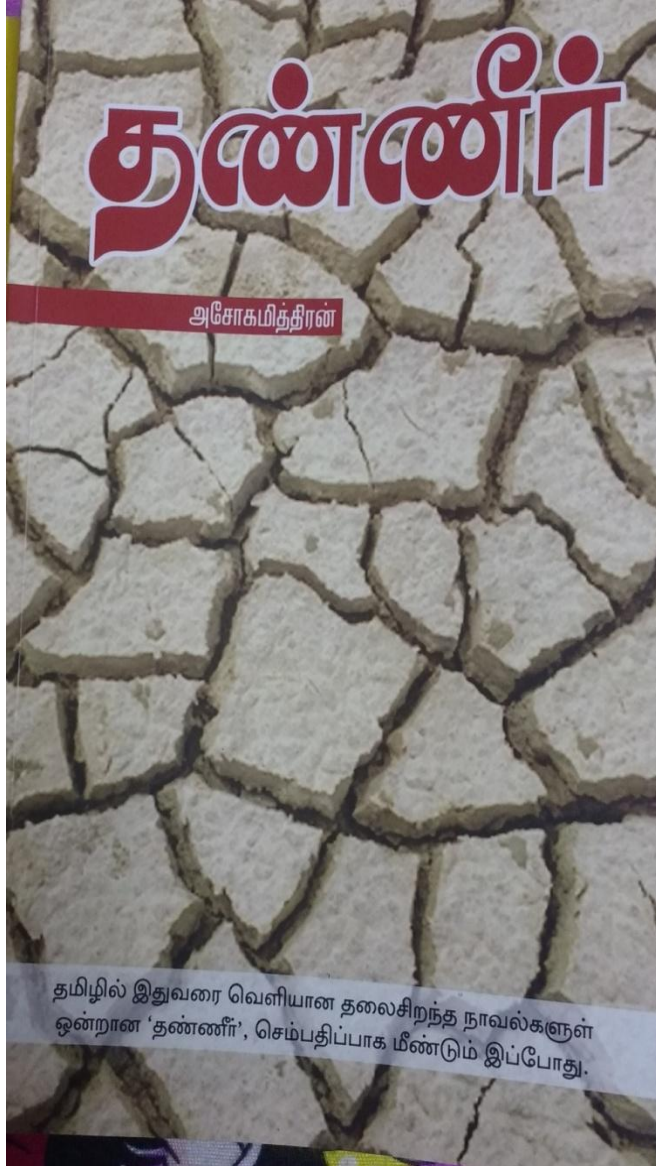
M A D E L E Y R o a d !





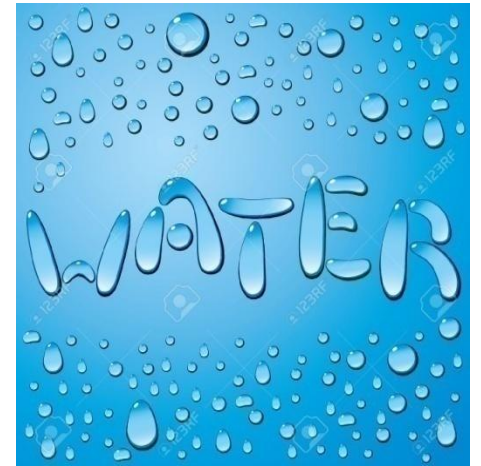
நீர் ஒரு சுய சரிதை – பில்ப் பால் எழுதிய புத்தகத்தின் முகப்பு.
Front Page of “A Biography of Water” by Philip Ball.





Ashokamitran's
Thanneer (Water)
landmark novel in the
annals of contemporary
Tamil literature.

*Events in Thanneer,
a short work are woven
around the first severe
water crisis to afflict
Madras (now Chennai)
late sixties.*





ஒரு நீண்ட இடைவெளிக்குப் பிறகு

எனக்குத் தெரிந்து 1948-லிருந்தே சென்னையில் தண்ணீர் ஒரு கவலைப்பட வேண்டிய பொருள்தான். தனித்தனி வீடுகள், கிணறுகள்; ஆனால் தண்ணீர் குடிக்கும்படியாக இருக்காது. ஆதலால் (அன்று கார்ப்பரேஷன்) குழாய்த் தண்ணீரை நம்பித்தான் சென்னைவாசிகள் எல்லோரும் இருந்தார்கள். தெருக் குழாய்கள் எனப் பல இருந்தன. அவற்றில் எந்நேரமும் தண்ணீர் வரும். தண்ணீருக்கென்று யாரும் தனியாகச் செலவழித்தது கிடையாது. குழாய்த் தண்ணீரை நேரடியாகவே பயன்படுத்துவார்கள். நானே சிறுவனாக இருந்த போது குழாயடியில் உள்ளங்கையைக் குவித்துக் கொண்டு தண்ணீர் குடித் திருக்கிறேன். ரயிலில் வெளியூர் போவதாக இருந்தால்தான் ஒரு கூலாவில் தண்ணீர் எடுத்துப் போவார்கள். வாழ்க்கையில் உன்னதமானதெல்லாம் இலவசம் என்று ஒரு பழமொழி அன்று உண்டு. அன்று அது உண்மை.

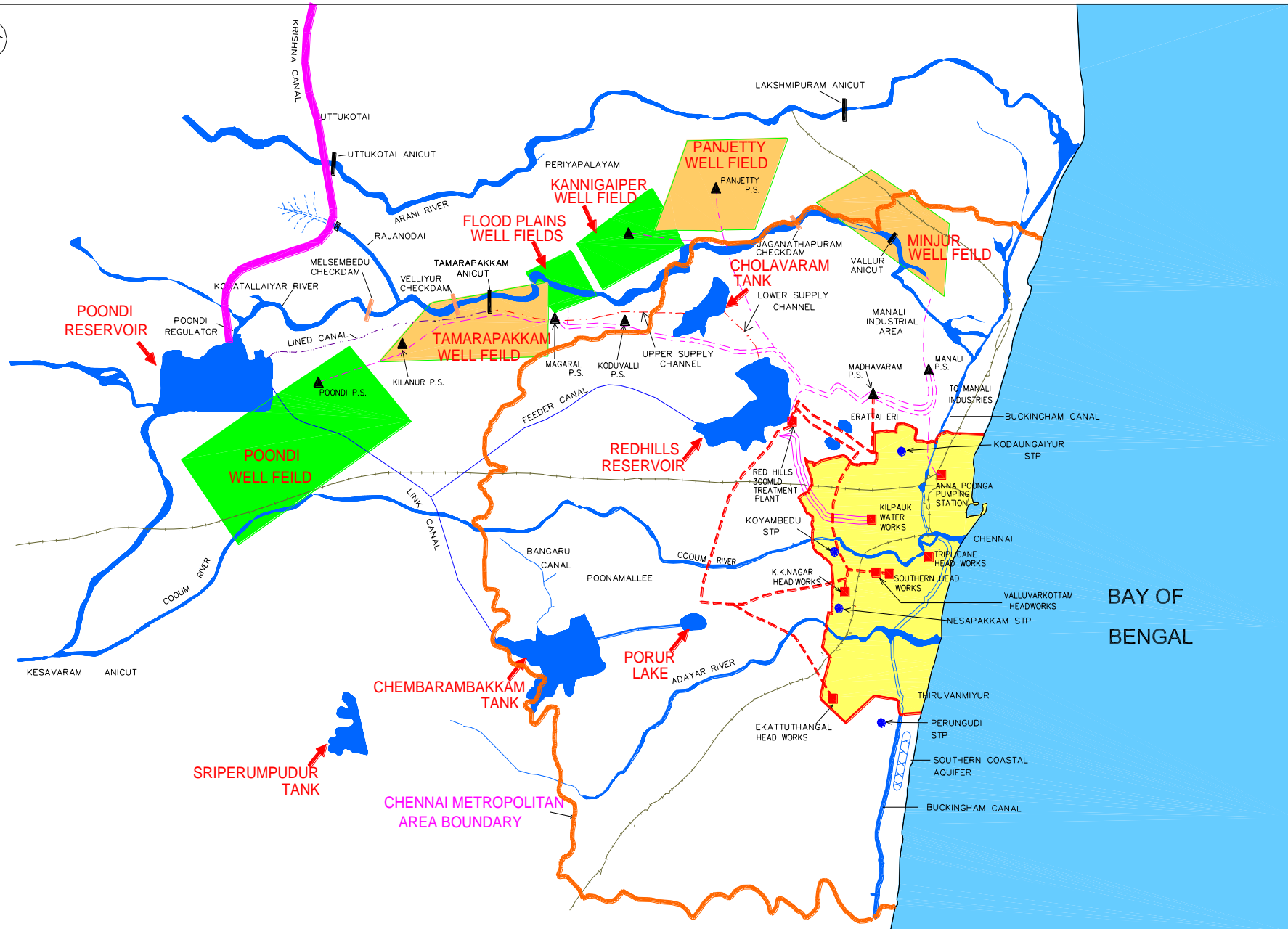
முப்பது முப்பத்தைந்து ஆண்டுகளுக்கு முன்புதான் தண்ணீர் வரி விதிக்கக் கூடியதாகவும் விலை கொடுக்க வேண்டியதாகவும் மாறத் தொடங்கிற்று. இந்த மாற்றம் மிக மெதுவாக வந்தது. இது எளிதில் புலப்படவில்லை. உண்மையில் அன்று சென்னை மக்கள் அனுபவித்த பல இன்னல்கள் இந்த மாற்றம் வந்து கொண்டிருப்பதை உணராததுதான். தண்ணீர் விநியோகமும் ஒழுங்கு படவில்லை. இன்று சென்னை நகரில் குடிசைவாசிகள் உள்படத் தண்ணீருக்குக் கட்டணம் ஏதாவது ஒரு வகையில் கட்ட வேண்டியிருக்கிறது. கூரைபிட்ட வீடுகளில் ஒரு குடும்பம் நூறிலிருந்து ஆயிரம் ரூபாய் வரை மாதாமாதம் தண்ணீருக்கே செலவழிக்க வேண்டியிருக்கிறது. பத்து மாடி, பன்னிரண்டு மாடிகளில் வசிக்கும் செல்வந்தர்கள்(!) மழை பெய்தாலும் பெய்யாவிட்டாலும் தண்ணீர் வசதிக்காக ஏராளமாகச் செலவழிக்க வேண்டியிருக்கிறது.

'தண்ணீர்' நாவல் இதெல்லாம் பற்றியல்ல. ஆனால் இவற்றுக்கான அறி ருறிகள் கொண்டதுதான். இதெல்லாம் நான் திட்டமிட்டு எழுதவில்லை. ஊர் பெயர் தெரியாத ஒரு பெண் குடத்தை வைத்துக் கொண்டு அலைவதைத் திரும்பத் திரும்பப் பார்த்ததன் விளைவாகத்தான் கதை எழுதப்பட்டது.

இந்த 2006-ம் ஆண்டில் இந்தத் 'தண்ணீர்' நாவலுக்கு எப்படிப் பொருத்தம் தேடுவது? தண்ணீர் மூலம் இருக்க முடியாது. ஆனால் இந்தக் கதையிலுள்ள நெருக்கடிகள் வேறு வேறு பொருள்களுக்காகவும் காரணங்களுக்காகவும்

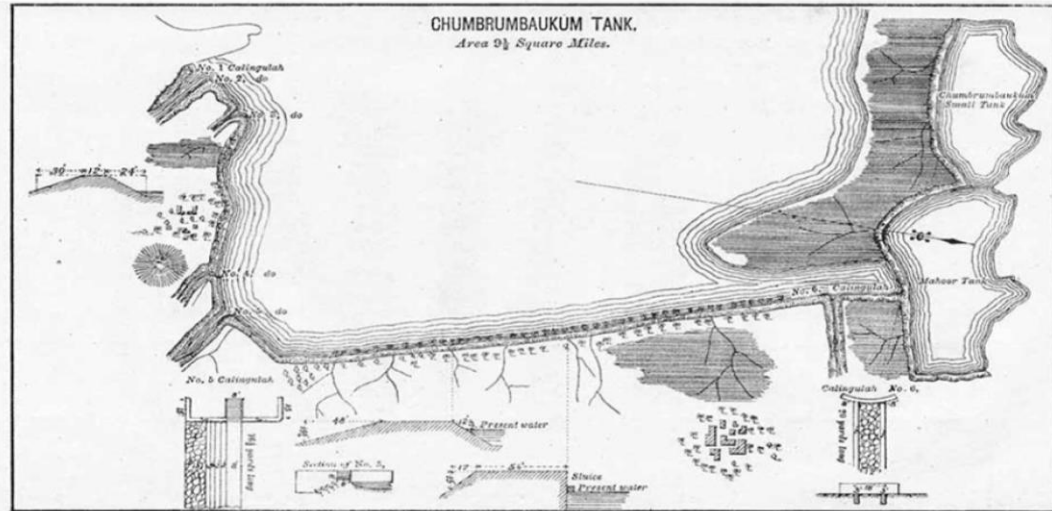


Chennai City water supply Source Map





Chembarambakkam Lake



Year : Pallava Period

Present Drawal - 3645 Mcft

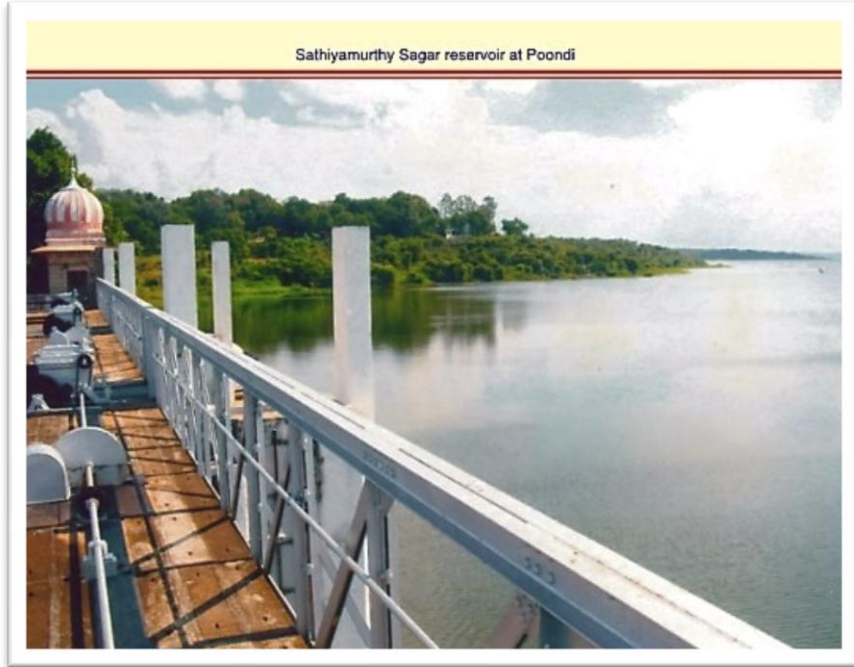
530 MLD Water Treatment Plant



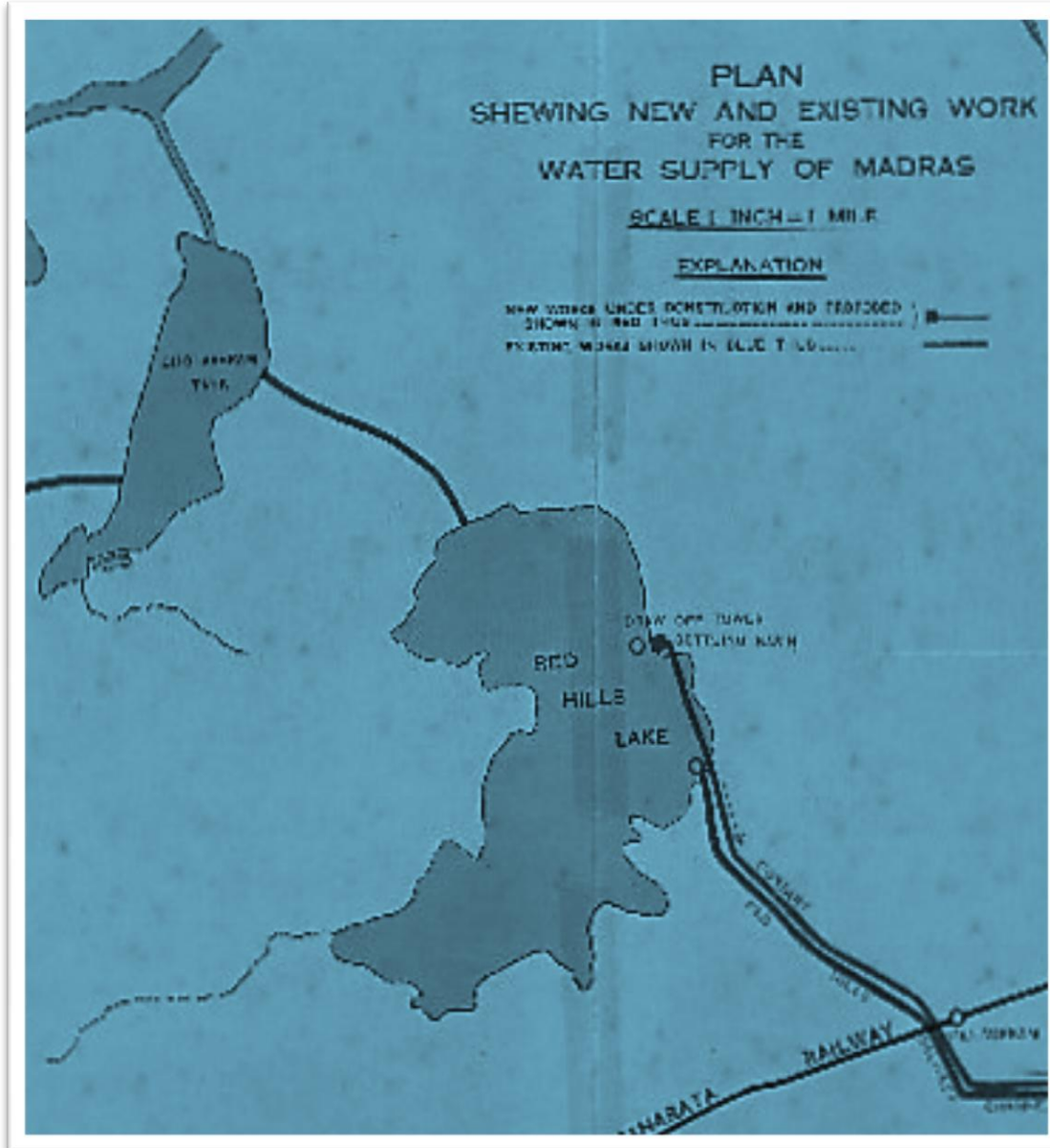
Poondi Lake

Year : 1944

Present Drawal - 3645 Mcft

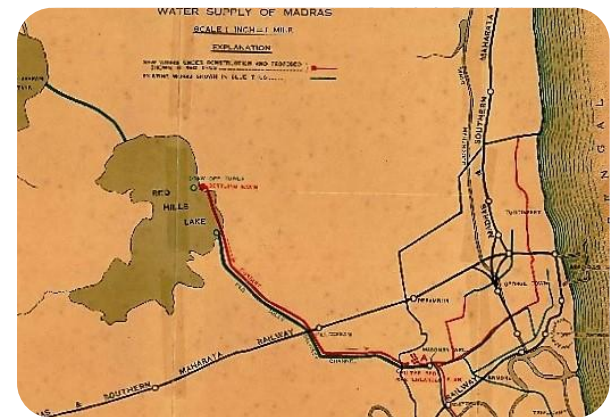


Cholavaram Lake



Year : 1870

Present Drawal - 881 Mcft



Redhills Lake

Year : 1870

Present Drawal - 881 Mcft

300 MLD Treatment Plant



Illustration & Co., Madras and Bangalore. No. 114
Madras Water Supply—The Storage Tank at Red Hills

மதுரை நீர் வழங்கல்—ரெட் ஹில்ஸ் ஸ்டோரேஜ் டேங்க்
மதுரை நீர் வழங்கல் & கோ. மதுரை மற்றும் பெங்களூர். 114

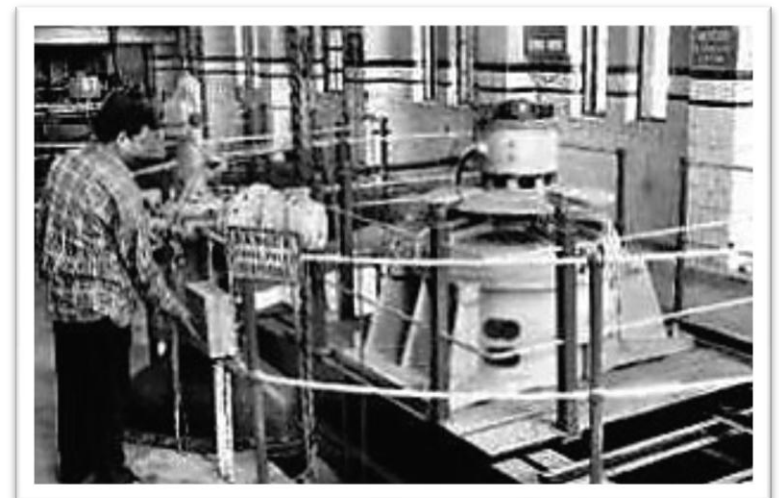
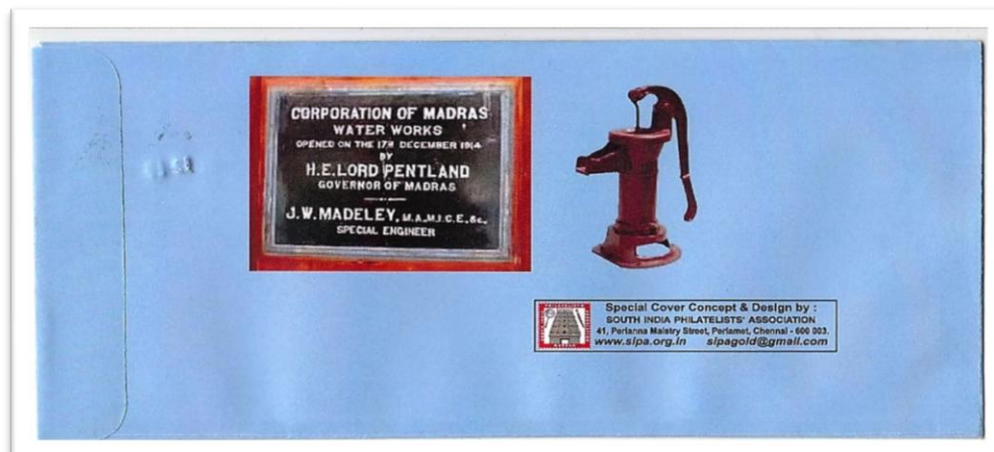
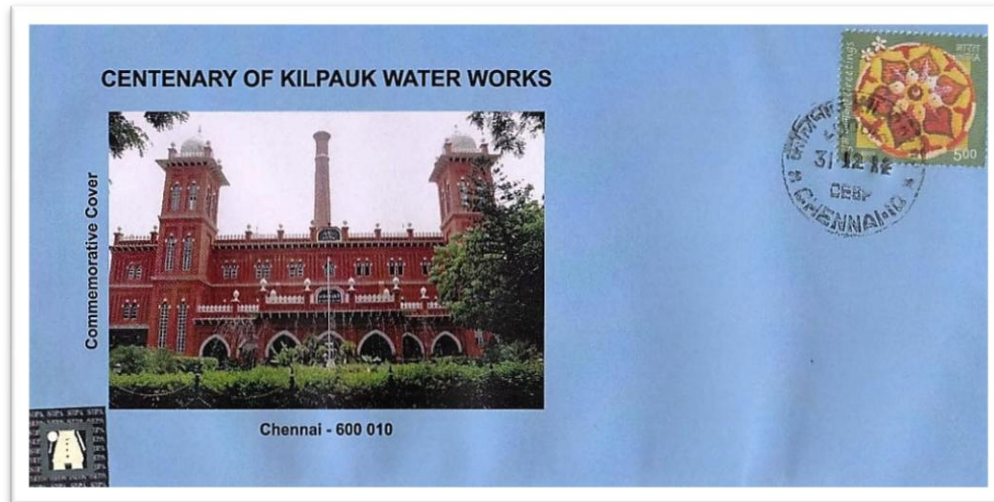




Madras Municipal Corporation – 1688

Up to 31.07.1977 served needs of Citizens

Water Supply and Sewerage Disposal





Madras Metropolitan Water Supply and Sewerage Board
MMWS S Board now CMWSS Board aka CHENNAI METRO
WATER

01.08.19778 onwards catering the needs of Citizens
Water Supply and Sewerage Disposal





Desalination Plants

Sea Water Reverse Osmosis Plants



Kattupalli -2010



Nemmeli- 2013





மறைந்த முன்னாள் முதல்வர் மாண்புமிகு எம்.ஜி.ஆர். அவர்கள்,
மறைந்த பாரத பிரதமர் திருமதி. இந்திராகாந்தி அவர்களிடம் கிருஷ்ணாநீர் திட்ட முதலீட்டு தொகை வழங்கல்
25.05.1983.Late Chief Minister MGR handing over the Investment Cost for
Krishna water Scheme to Late Prime Minister Mrs. Indira Gandhi - 25.05.1983





UN WATER

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2016

WATER AND JOBS

With the 2030 Agenda

the needs in the water sector are greater than ever before.

We need more and better talent to help shape our future.



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better jobs

www.worldwaterday.org



UN WATER

WORLD WATER DAY

22 MARCH 2016 - WATER AND JOBS



Water supply Dynamism will always Continue for Sustainable Development

